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SKY LIFT

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"All torch pilots! Report to the Commodore!" The call echoed through Earth Satellite Station.

Joe Appleby flipped off the shower to listen. "You don't mean me," he said happily, "I'm on leave-but I'd better shove before you change your mind."

He dressed and hurried along a passageway. He was in the outer ring of the Station; its slow revolution, a giant wheel in the sky, produced gravity-like force against his feet. As he reached his room the loud-speakers repeated, "All torch pilots, report to the Commodore," then added, "Lieutenant Appleby, report to the Commodore." Appleby uttered a rude monosyllable.

The Commodore's office was crowded. All present wore the torch, except a flight surgeon and Commodore Berrio himself, who wore the jets of a rocketship pilot. Berrio glanced up and went on talking: "-the situation. If we are to save Proserpina Station, an emergency run must be made out to Pluto. Any questions?"

No one spoke. Appleby wanted to, but did not wish to remind Berrio that he had been late. "Very well," Berrio went on. "Gentlemen, it's a job for torch pilots. I must ask for volunteers."

Good! thought Appleby. Let the eager lads volunteer and then adjourn. He decided that he might still catch the next shuttle to Earth. The Commodore continued, "Volunteers please remain. The rest are dismissed."

Excellent, Appleby decided. Don't rush for the door, me lad. Be dignified-sneak out between two taller men.

No one left. Joe Appleby felt swindled but lacked the nerve to start the exodus. The Commodore said soberly, "Thank you, gentlemen. Will you wait in the wardroom, please?" Muttering, Appleby left with the crowd. He wanted to go out to Pluto someday-sure!-but not now, not with Earthside leave papers in his pocket.

He held a torcher's contempt for the vast distance itself. Older pilots thought of interplanetary trips with a rocket-man's bias, in terms of years-trips that a torch ship with steady acceleration covered in days. By the orbits that a rocketship must use the round trip to Jupiter takes over five years; Saturn is twice as far, Uranus twice again, Neptune still farther. No rocketship ever attempted Pluto; a round trip would take more than ninety years. But torch ships had won a foothold even there: Proserpina Station-cryology laboratory, cosmic radiation station, parallax observatory, physics laboratory, all in one quintuple dome against the unspeakable cold.

Nearly four billion miles from Proserpina Station Appleby followed a classmate into the wardroom. "Hey, Jerry," he said, "tell me what it is I seem to have volunteered for?"

Jerry Price looked around. "Oh, it's late Joe Appleby. Okay, buy me a drink."

A radiogram had come from Proserpina, Jerry told him, reporting an epidemic: "Larkin's disease." Appleby whistled. Larkin's disease was a mutated virus, possibly of Martian origin; a victim's red-cell count fell rapidly, soon he was dead. The only treatment was massive transfusions while the disease ran its course. "So, m'boy, somebody has to trot out to Pluto with a blood bank."

Appleby frowned. "My pappy warned me. 'Joe,' he said, 'keep your mouth shut and never volunteer.'"

Jerry grinned. "We didn't exactly volunteer."

"How long is the boost? Eighteen days or so? I've got social obligations Earthside."

"Eighteen days at one-g-but this will be higher. They are running out of blood donors."

"How high? A g-and-a-half?" Price shook his head. "I'd guess two gravities."

"Two g's!"

"What's hard about that? Men have lived through a lot more."

"Sure, for a short pull-out-not for days on end. Two g's strains your heart if you stand up."

"Don't moan, they won't pick you-I'm more the hero type. While you're on leave, think of me out in those lonely wastes, a grim-jawed angel of mercy. Buy me another drink."

Appleby decided that Jerry was right; with only two pilots needed he stood a good chance of catching the next Earth shuttle. He got out his little black book and was picking phone numbers when a messenger arrived. "Lieutenant Appleby, sir?" Joe admitted it.

"The-Commodore's-compliments-and-will-you-report-at-once-sir?"

"On my way." Joe caught Jerry's eye. "Who is what type?"

Jerry said, "Shall I take care of your social obligations?"

"Not likely!"

"I was afraid not. Good luck, boy."

With Commodore Berrio was the flight surgeon and an older lieutenant. Berrio said, "Sit down, Appleby. You know Lieutenant Kleuger? He's your skipper. You will be co-pilot."

"Very good, sir."

"Appleby, Mr. Kleuger is the most experienced torch pilot available. You were picked because medical records show you have exceptional tolerance for acceleration. This is a high-boost trip.'"

"How high, sir?"

Berrio hesitated. "Three and one-half gravities." Three and a half g's! That wasn't a boost-that was a pullout. Joe heard the surgeon protest, "I'm sorry, sir, but three gravities is all I can approve."
Berrio frowned. "Legally, it's up to the captain. But three hundred lives depend on it."

Kleuger said, "Doctor, let's see that curve." The surgeon slid a paper across the desk; Kleuger moved it so that Joe could see it. "Here's the scoop, Appleby-"

A curve started high, dropped very slowly, made a sudden "knee" and dropped rapidly. The surgeon put his finger on the "knee." "Here," he said soberly, "is where the donors are suffering from loss of blood as much as the patients. After that it's hopeless, without a new source of blood."

"How did you get this curve?" Joe asked.

"It's the empirical equation of Larkin's disease applied to two hundred eighty-nine people."
Appleby noted vertical lines each marked with an acceleration and a time. Far to the right was one marked: "1 g- 18 days" That was the standard trip; it would arrive after the epidemic had burned out. Two gravities cut it to twelve days seventeen hours; even so, half the colony would be dead. Three g's was better but still bad. He could see why the Commodore wanted them to risk three-and-a-half kicks; that line touched the "knee," at nine days fifteen hours. That way they could save almost everybody, but, oh, brother!

The time advantage dropped off by inverse squares. Eighteen days required one gravity, so nine days took four, 'while four-and-a-half days required a fantastic sixteen gravities. But someone had drawn a line at "16 g-4.5 days." "Hey! This plot must be for a robot-torch-that's the ticket! Is there one available?"

Berrio said gently, "Yes. But what are its chances?"

Joe shut up. Even between the inner planets robots often went astray. In four-billion-odd miles the chance that one could hit close enough to be caught by radio control was slim. "We'll try," Berrio promised. "If it succeeds, I'll call you at once." He looked at Kleuger. "Captain, time is short. I must have your decision."

Kleuger turned to the surgeon. "Doctor, why not another half gravity? I recall a report on a chimpanzee who was centrifuged at high g for an amazingly long time."

"A chimpanzee is not a man."

Joe blurted out, "How much did this chimp stand, Surgeon?"

"Three and a quarter gravities for twenty-seven days."

"He did? What shape was he in when the test ended?"

"He wasn't," the doctor grunted.

Kleuger looked at the graph, glanced at Joe, then said to the

Commodore, "The boost will be at three and one-half gravities, sir."

Berrio merely said, "Very well, sir. Hurry over to sick bay. You haven't much time."

Forty-seven minutes later they were being packed into the scout torchship Salamander. She was in orbit close by; Joe, Kleuger, and their handlers came by tube linking the hub of the Station to her airlock Joe was weak and dopy from a thorough washing-out plus a dozen treatments and injections. A good thing, he thought, that light-off would be automatic.

The ship was built for high boost; controls were over the pilots' tanks, where they could be fingered without lifting a hand. The flight surgeon and an assistant fitted Kleuger into one tank while two medical technicians arranged Joe in his. One of them asked, "Underwear smooth? No wrinkles?"

"I guess."

"I'll check." He did so, then arranged fittings necessary to a man who must remain in one position for days. "The nipple left of your mouth is water; the two on your right are glucose and bouillon."

"No solids?"

The surgeon turned in the air and answered, "You don't need any, you won't want any, and you mustn't have any. And be careful in swallowing."

"I've boosted before."

"Sure, sure. But be careful."

Each tank was like an oversized bathtub filled with a liquid denser than water. The top was covered by a rubbery sheet, gasketed at the edges; during boost each man would float with the sheet conforming to his body. The Salamander being still in free orbit, everything was weightless and the sheet now served to keep the fluid from floating out. The attendants centered Appleby against the sheet and fastened him with sticky tape, then placed his own acceleration collar, tailored to him, behind his head. The surgeon came over and inspected. "You okay?"

"Sure."

"Mind that swallowing." He added, "Okay, Captain. Permission to leave your ship, sir?"

"Certainly. Thank you, Surgeon."

"Good luck." He left with the technicians.

The room had no ports and needed none. The area in front of Joe's face was filled with screens, instruments, radar, and data displays; near his forehead was his eyepiece for the coelostat. A light blinked green as the passenger tube broke its anchors; Kleuger caught Joe's eye in a mirror mounted opposite them. "Report, Mister."

"Minus seven' minutes oh four. Tracking. Torch warm and idle.

Green for light-off."

"Stand by while I check orientation." Kleuger's eyes disappeared into his coelostat eyepiece. Presently he said, "Check me, Joe."

"Aye aye, sir." Joe twisted a knob and his eyepiece swung down. He found three star images brought together perfectly in the cross hairs. "Couldn't be better, Skipper."

"Ask for clearance."

"Salamander to Control-clearance requested to Proserpina. Automatic light-off on tape. All green."

"Control to Salamander. You are cleared. Good luck!"

"Cleared, Skipper. Minus three. Double oh!" Joe thought morosely that he should be half way to Earth now. Why the hell did the military always get stuck with these succor-&-rescue jobs?

When the counter flashed the last thirty seconds he forgot his foregone leave. The lust to travel possessed him. To go, no matter where, anywhere go! He smiled as the torch lit off.

Then weight hit him.

At three and one-half gravities he weighed six hundred and thirty pounds. It felt as if a load of sand had landed on him, squeezing his chest, making him helpless, forcing his head against his collar. He strove to relax, to let the supporting liquid hold him together. It was all right to tighten up for a pull-out, but for a long boost one must relax. He breathed shallowly and slowly; the air was pure oxygen, little lung action was needed. But he labored just to breathe. He could feel his heart struggling to pump blood grown heavy through squeezed vessels. This is awful! he admitted. I'm not sure I can take it. He had once had four g for nine minutes but he had forgotten how bad it was.

"Joe! Joe!"

He opened his eyes and tried to shake his head. "Yes, Skipper." He looked for Kleuger in the mirror; the pilot's face was sagging and drawn, pulled into the mirthless grin of high acceleration.

"Check orientation!"

Joe let his arms float as he worked controls with leaden fingers. "Dead on, Skipper."

"Very well. Call Luna."

Earth Station was blanketed by their torch but the Moon was on their bow. Appleby called Luna tracking center and received their data on the departure plus data relayed from Earth Station. He called figures and times to Kleuger, who fed them into the computer. Joe then found that he had forgotten, while working, his unbearable weight. It felt worse than ever. His neck ached and he suspected that there was a wrinkle under his left calf. He wiggled in the tank to smooth it, but it made it worse. "How's she look, Skipper?"

"Okay. You're relieved, Joe. I'll take first watch."

"Right, Skipper." He tried to rest-as if a man could when buried under sandbags. His bones ached and the wrinkle became a nagging nuisance. The pain in his neck got worse; apparently he had wrenched it at light-off. He turned his head, but there were just two positions-bad and worse. Closing his eyes, he attempted to sleep. Ten minutes later he was wider awake than ever, his mind on three things, the lump in his neck, the irritation under his leg, and the squeezing weight.

Look, bud, he told himself, this is a long boost. Take it easy, or adrenalin exhaustion will get you. As the book says, "The ideal pilot is relaxed and unworried. Sanguine in temperament, he never borrows trouble." Why, you chair-warming so-and-so! Were you at three and a half g's when you wrote that twaddle?

Cut it out, boy! He turned his mind to his favorite subject-girls, bless their hearts. Such self-hypnosis he had used to pass many a lonely million miles. Presently he realized wryly that his phantom harem had failed him. He could not conjure them up, so he banished them and spent his time being miserable.

He awoke in a sweat. His last dream had been a nightmare that he was headed out to Pluto at an impossibly high boost.

My God! So he was!

The pressure seemed worse. When he moved his head there was a stabbing pain down his side. He was panting and sweat was pouring off. It ran into his eyes; he tried to wipe them, found that his arm did not respond and that his fingertips were numb. He inched his arm across his body and dabbed at his eyes; it did not help.

He stared at the elapsed time dial of the integrating ancelerograph and tried to remember when he was due on watch. It took a while to understand that six and a half hours had passed since light-off. He then realized with a jerk that it was long past time to relieve the watch. Kleuger's face in the mirror was still split in the grin of high g; his eyes were closed. "Skipper!" Joe shouted. Kleuger did not stir. Joe felt for the alarm button, thought better of it. Let the poor goop sleep!

But somebody had to feed the hogs-better get the clouds out of his brain. The accelerometer showed three and a half exactly; the torch dials were all in operating range; the radiometer showed leakage less than ten percent of danger level.

The integrating accelerograph displayed elapsed time, velocity, and distance, in dead-reckoning for empty space. Under these windows were three more which showed the same by the precomputed tape controlling the torch; by comparing, Joe could tell how results matched predictions. The torch had been lit off for less than seven hours, speed was nearly two million miles per hour and they were over six million miles out. A third display corrected these

figures for the Sun's field, but Joe ignored this; near Earth's orbit the Sun pulls only one two-thousandth of a gravity-a gnat's whisker, allowed for in precomputation. Joe merely noted that tape and D.R. agreed; he wanted an outside check.

Both Earth and Moon now being blanketed by the same cone of disturbance, he. twisted knobs until their radar beacon beamed toward Mars and let it pulse the signal meaning "Where am I?" He did not wait for answer; Mars was eighteen minutes away by radio. He turned instead to the coelostat. The triple image had wandered slightly but the error was too small to correct.

He dictated what he had done into the log, whereupon he felt worse. His ribs hurt, each breath carried the stab of pleurisy. His hands and feet felt "pins-and-needles" from scanty circulation. He wiggled them, which produced crawling sensations and wearied him. So he held still and watched the speed soar. It increased seventy-seven miles per hour every second, more than a quarter million miles per hour every hour. For once he envied rocketship pilots; they took forever to get anywhere but they got there in comfort.

Without the torch, men would never have ventured much past Mars. E = Mc2, mass is energy, and a pound of sand equals fifteen billion horsepower-hours. An atomic rocket-ship uses but a fraction of one percent of that energy, whereas the new torchers used better than eighty percent. The conversion chamber of a torch was a tiny sun; particles expelled from it approached the speed of light.

Appleby was proud to be a torcher, but not at the moment. The crick had grown into a splitting headache, he wanted to bend his knees and could not, and he was nauseated from the load on his stomach. Kleuger seemed able to sleep through it, damn his eyes! How did they expect a man to stand this? Only eight hours and already he felt done in, bushed-how could he last nine days?

Later-time was beginning to be uncertain-some indefinite time later he heard his name called. "Joe! Joe!"

Couldn't a man die in peace? His eyes wandered around, found the mirror; he struggled to focus. "Joe! You've got to relieve me-I'm groggy."

"Aye aye, sir."

"Make a check, Joe. I'm too goofed up to do it."

"I already did, sir."

"Huh? When?"

Joe's eyes swam around to the elapsed-time dial. He closed one eye to read it. "Uh, about six hours ago."

"What? What time is it?"

Joe didn't answer. He wished peevishly that Kleuger would go away. Kleuger added soberly, "I must have blacked out, kid. What's

the situation?" Presently he insisted, "Answer me, Mister."

"Huh? Oh, we're all right-down the groove. Skipper, is my left leg twisted? I can't see it."

"Eh? Oh, never mind your leg! What were the figures?"

"What figures?"

"'What figures?' Snap out of it, Mister! You're on duty."

A fine one to talk, Joe thought fretfully. If that's how he's going to act, I'll just close my eyes and ignore him.

Kleuger repeated, "The figures, Mister."

"Huh? Oh, play 'em off the log if you're so damned eager!" He expected a blast at that, but none came. When next he opened his eyes Kleuger's eyes were closed. He couldn't recall whether the Skipper had played his figures back or not-nor whether he had logged them. He decided that it was time for another check but he was dreadfully thirsty; he needed a drink first. He drank carefully but still got a drop down his windpipe. A coughing spasm hurt him all over and left him so weak that he had to rest.

He pulled himself together and scanned the dials. Twelve hours and-No, wait a minute! One day and twelve hours-that couldn't be right. But their speed was over ten million miles per hour and their distance more than ninety million miles from Earth;, they were beyond the orbit of Mars. "Skipper! Hey! Lieutenant Kleuger!"

Kleuger's face was a grinning mask. In dull panic Joe tried to find their situation. The coelostat showed them balanced; either the ship had wobbled back, or Kleuger had corrected it. Or had he himself? He decided to run over the log and see. Fumbling among buttons he found the one to rewind the log.

Since he didn't remember to stop it the wire ran all the way back to light-off, then played back, zipping through silent stretches and slowing for speech. He listened to his record of the first check, then found that Phobos Station, Mars, had answered with a favorable report-to which a voice added, "Where's the fire?"

Yes, Kleuger had corrected balance hours earlier. The wire hurried through a blank spot, slowed again-Kleuger had dictated a letter to someone; it was unfinished and incoherent. Once Kleuger had stopped to shout, "Joe! Joe!" and Joe heard himself answer, "Oh shut up!" He had no memory of it.

There was something he should do but he was too tired to think and he hurt all over-except his legs, he couldn't feel them. He shut his eyes and tried not to think. When he opened them the elapsed time was turning three days; he closed them and leaked tears.

A bell rang endlessly; he became aware that it was the general alarm, but he felt no interest other than a need to stop it. It was hard to find the switch, his fingers were numb. But he managed it and was

about to rest from the effort, when he heard Kleuger call him. "Joe!"

"Huh?"

"Joe-don't go back to sleep or I'll turn the alarm on again. You hear me?"

"Yeah-" So Kleuger had done that-why, damn him!

"Joe, I've got to talk to you. I can't stand any more."

"'Any more what?"

"High boost. I can't take any more-it's killing me."

"Oh, rats!" Turn on that loud bell, would he?

"I'm dying, Joe. I can't see-my eyes are shot. Joe, I've got to shut down the boost. I've got to."

"Well, what's stopping you?" Joe answered irritably.

"Don't you see, Joe? You've got to back me up. We tried-and we couldn't. We'll both log it. Then it'll be all right."

"Log what?"

"Eh? Dammit, Joe, pay attention. I can't talk much. You've got to say-to say that the strain became unendurable and you advised me to shut down. I'll confirm it and it will be all right." His labored whisper was barely audible.

Joe couldn't figure out what Kleuger meant. He couldn't remember why Kleuger had put them in high boost anyhow. "Hurry, Joe."

There he went, nagging him! Wake him up and then nag him-to hell with him. "Oh, go back to sleep!" He dozed off and was again jerked awake by the alarm. This time he knew where the switch was and flipped it quickly. Kleuger switched it on again, Joe turned it off. Kleuger quit trying and Joe passed out.

He came awake in free fall. He was still realizing the ecstasy of being weightless when he managed to reorient; he was in the Salamander, headed for Pluto. Had they reached the end of the run? No, the dial said four days and some hours. Had the tape broken? The autopilot gone haywire? He then recalled the last time he had been awake.

Kleuger had shut off the torch!

The stretched grin was gone from Kleuger's face, the features seemed slack and old. Joe called out, "Captain! Captain Kleuger!" Kleuger's eyes fluttered and lips moved but Joe heard nothing. He slithered out of the tank, moved in front of Kleuger, floated there. "Captain, can you hear me?"

The lips whispered, "I had to, boy. I saved us. Can you get us back, Joe?" His eyes opened but did not track.

"Captain, listen to me. I've got to light off again."

"Huh? No, Joe, no!"

"I've got to."

"No! That's an order, Mister."

Appleby stared, then with a judo chop caught the sick man on the jaw. Kleuger's head bobbed loosely. Joe pulled himself between the tanks, located a three-position switch, turned it from "Pilot & Co-Pilot" to "Co-Pilot Only"; Kleuger's controls were now dead. He glanced at Kleuger, saw that his head was not square in his collar, so he taped him properly into place, then got back in his tank. He settled his head and fumbled for the switch that would put the autopilot back on tape. There was some reason why they must finish this run-but for, the life of him he could not remember why. He squeezed the switch and, weight pinned him down.

He was awakened by a dizzy feeling added to the pressure. It went on for seconds, he retched futilely. When the motion stopped he peered at the dials. The Salamander had just completed the somersault from acceleration to deceleration. They had come half way, about, eighteen hundred million miles; their speed was over three million miles per hour and beginning to drop. Joe felt that he should report it to the skipper-he had no recollection of any trouble with him. "Skipper! Hey!" Kleuger did not move. Joe called again, then resorted to the alarm.

The clangor woke, not Kleuger, but Joe's memory. He shut it off, feeling soul sick. Topping his physical misery was shame and loss and panic as he recalled the shabby facts. He felt that he ought to log it but could not decide what to say. Beaten and ever lower in mind he gave up and tried to rest.

He woke later with something gnawing at his mind...something he should do for the Captain...something about a cargo robot-

That was it! If the robot-torch had reached Pluto, they could quit! Let's see-elapsed-time from light-off was over five days. Yes, if it ever got there, then- He ran the wire back, listened for a recorded message. It was there: "Earth Station to Salamander-Extremely sorry to report that robot failed rendezvous. We are depending on you.-Berrio."

Tears of weakness and disappointment sped down his cheeks, pulled along by three and one-half gravities.

It was on the eighth day that Joe realized that Kleuger was dead. It was not the stench-he was unable to tell that from his own ripe body odors. Nor was it that the Captain had not roused since flip-over; Joe's time sense was so fogged that he did not realize this. But he had dreamt that Kleuger was shouting for him to get up, to stand up-"Hurry up, Joe!" But the weight pressed him down.

So sharp was the dream that Joe tried to answer after he woke up. Then he looked for Kleuger in the mirror. Kleuger's face was much the same, but he knew with sick horror that the captain was dead. Nevertheless he tried to arouse him with the alarm. Presently he gave up; his fingers were purple and he could feel nothing below his waist;

he wondered if be were dying and hoped that he was. He slipped into that lethargy which had become his normal state.

He did not become conscious when, after more than nine days, the autopilot quenched the torch. Awareness found him floating in midroom, having somehow squirmed out of his station. He felt deliciously lazy and quite hungry; the latter eventually brought him awake.

His surroundings put past events somewhat into place. He pulled himself to hii tank and examined the dials. Good grief!-it had been two hours since the ship had gone into free fall. The plan called for approach to be computed before the tape ran out, corrected on entering free fall, a new tape cut and fed in without delay, then let the autopilot make the approach. He had done nothing and wasted two hours.

He slid between tank and controls, discovering then that his legs were paralyzed. No matter-legs weren't needed in free fall, nor in the tank. His hands did not behave well, but he could use them. He was stunned when he found Kleuger's body, but steadied down and got to work. He had no idea where he was; Pluto might be millions of miles away, or almost in his lap-perhaps they had spotted him and were already sending approach data. He decided to check the wire.

He found their messages at once:

"Proserpina to Salamander-Thank God you are coming. Here are your elements at quench out-": followed by time reference, range-and-bearing figures, and doppler data.

And again: "Here are later and better figures, Salamander-hurry!"

And finally, only a few minutes 'before: "Salamander, why the delay in light-off? Is your computer broken down? Shall we compute a ballistic for you?"

The idea that anyone but a torcher could work a torch ballistic did not sink in. He tried to work fast, but his hands bothered him-he punched wrong numbers and had to correct them. It took him a half hour to realize that the trouble was not just his fingers. Ballistics, a subject as easy for him as checkers, was confused in his mind.

He could not work the ballistic.

"Salamander to Proserpino-Request ballistic for approach into parking orbit around Pluto."

The answer came so quickly that he knew that they had not waited for his okay. With ponderous care he cut the tape and fed it into the autopilot. It was then that he noticed the boost. . . four point oh three.

Four gravities for the approach- He had assumed that the approach would be a normal one-and so it might have been if he had not wasted three hours. But it wasn't fair! It was too much to expect.

He cursed childishly as he settled himself, fitted the collar, and squeezed the button that turned control to the autopilot. He had a few minutes of waiting time; he spent it muttering peevishly. They could have figured him a better ballistic-hell, he should have figured it. They were always pushing him around. Good old Joe, anybody's punching bag! That so-and-so Kleuger over there, grinning like a fool and leaving the work for him-if Kleuger hadn't been so confounded eager- Acceleration hit him and he blacked out.

When the shuttle came up to meet him, they found one man dead, one nearly dead, and the cargo of whole blood.

The supply ship brought pilots for the Salamander and fetched Appleby home. He stayed in sick bay until ordered to Luna for treatment; on being detached he reported to Berrio, escorted by the flight surgeon. The Commodore let him know brusquely that he had done a fine job, a damn' fine job! The interview ended and the surgeon helped Joe to stand; instead of leaving Joe said, "Uh, Commodore?"

"Yes, son?"

"Oh, there's one thing I don't understand, uh, what I don't understand is, uh, this: why do I have to go, uh, to the geriatrics clinic at Luna City? That's for old people, uh? That's what I've always understood-the way I understand it. Sir?"

The surgeon cut in, "I told you, Joe. They have the very best physiotherapy. We got special permission for you."

Joe looked perplexed. "Is that right, sir? I feel funny, going to an old folks', uh, hospital?"

"That's right, son."

Joe grinned sheepishly. "Okay, sir, uh, if you say so."

They started to leave. "Doctor-stay a moment. Messenger, help Mr. Appleby."

"Joe, can you make it?"

"Uh, sure! My legs are lots better-see?" He went out, leaning on the messenger.

Berrio said, "Doctor, tell me straight: will Joe get well?"

"No, sir."

"Will he get better?'

"Some, perhaps. Lunar gravity makes it easy to get the most out of what a man has left."

"But will his mind clear up?"

The doctor hesitated. "It's this way, sir. Heavy acceleration is a speeded-up aging process. Tissues break down, capillaries rupture, the heart does many times its proper work. And there is hypoxia, from failure to deliver enough oxygen to the brain."

The Commodore struck his desk an angry blow. The surgeon said gently, "Don't take it so hard, sir."

"Damn it, man-think of the way he was. Just a kid, all bounce and vinegar-now look at him! He's an old man-senile."

"Look at it this way," urged the surgeon, "you expended one man, but you saved two hundred and seventy."

"'Expended one man'? If you mean Kleuger, he gets a medal and his wife gets a pension. That's the best, any of us can expect. I wasn't thinking of Kleuger."

"Neither was I," answered the surgeon.